

CLAIMS

1. A method of assisting the piloting of an aircraft in the vicinity of a landing or takeoff point (PP), the method being characterized by:
 - 5 · using means (10 to 15) including a computer (10) to determine the locus (RNONSUR) of entry and/or exit points (PE, PS) for a given approach and/or departure altitude (HE, HS) that are not safe for reaching said landing point or on leaving said takeoff point, on the basis of coordinates for the landing or takeoff point input into the computer by a tool (14) for inputting coordinates and suitable for being manipulated by a pilot, and taking account of a climb/descent template or profile (R1, R2, R3, PR, PR1, PR3); and
 - 10 · presenting a diagram (D) including said locus on a display device (16).
2. A method according to claim 1, in which a limit curve segment is determined corresponding to the trace in the plane or level corresponding to said altitude of the template or profile (R1, R2, R3, PR, PR1, PR3) passing through the landing or takeoff point and grazing or bearing against the top of an obstacle (O1, O2, O2) extending in the vicinity of the landing or takeoff point.
3. A method according to claim 1 or claim 2, in which at least one segment (TARS1, TARS2) of the limit curve (CL) is determined that extends in a plane or level (P) corresponding to said altitude, the portion of the limit curve separating the locus (RSUR) of safe entry and/or exit points from unsafe entry and/or exit points, and the landing or takeoff point together with the segment of the limit curve are displayed on the display device.
- 35 4. A method according to claim 2 or claim 3, in which there is displayed on the display device the diagram (D)

including the landing or takeoff point, at least a portion of one or more circles (C2, C3, DCA3, DCA15, DCD2, DCD6) centered on said point, and the limit curve portion, at least.

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5. A method according to any one of claims 2 to 4, in which a first color or texture is applied to a portion (RSUR) of the diagram extending inside the limit curve portion, and a second color or texture, different from 10 the first color or texture, is applied to the portion (RNONSUR) of the diagram that extends outside said limit curve portion, and these portions of the diagram are displayed on the display device.

15 6. A method according to any one of claims 1 to 5, in which an altitude margin (M) is associated with the template or profile in order to compensate for errors in positioning the point (PP) and/or the obstacle, and/or in order to take account of an overflight margin.

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7. A method according to any one of claims 1 to 6, in which the template or profile comprises a single rectilinear segment.

25 8. A method according to any one of claims 1 to 6, in which the template or profile comprises a plurality of segments.

9. A method according to claim 8, in which the 30 projections of the segments in a vertical plane are in alignment.

10. A method according to claim 8, in which the 35 projections of the segments in a horizontal plane are in alignment.

11. A method according to any one of claims 1 to 10, in which a symbol is displayed on the device (16) representing the entry and/or exit point (PE, PS), said symbol being surrounded by a first circle representing a 5 first margin corresponding to a positioning error for the point and being surrounded by a second circle concentric with the first circle and representing an additional horizontal piloting margin.

10 12. A device for assisting the piloting of an aircraft in the vicinity of a landing or takeoff point (PP), the device being characterized in that it comprises:

- a database (11) containing characteristics of obstacles (O1, O2, O3);

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- a computer (10) provided with means (12) for reading the characteristics of obstacles from the database;
- a tool (14) for inputting into the computer the coordinates of a landing or takeoff point;

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- means (13) co-operating with the computer to respond to the coordinates of the landing or takeoff point and to an approach or departure altitude to determine the locus (RNONSUR) of entry and/or exit points at said altitude that are unsafe, taking account of a predetermined climb/descent template or profile (R1, R2, R3, PR, PR1, PR3); and
- means (15, 16) for presenting said locus to the pilot.

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30 13. A device according to claim 12, in which the database (11) includes the coordinates and the dimensions of natural or artificial obstacles (O1, O2, O3).

35 14. A device according to claim 12 or claim 13, including a tool (14) for inputting into the computer an approach or departure altitude, which tool is suitable for being manipulated by a pilot of the aircraft.

15. A device according to any one of claims 12 to 14, in which the input tool (14) is a pointer device or a joystick.

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16. A device according to any one of claims 12 to 15, embarked or suitable for embarking on board an aircraft.